



EFFECT OF TREADMILL TRAINING ON CARDIO-VASCULAR ENDURANCE OF SCHOOL GOING BOYS

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Abstract

The primary aim of the study was to determine the Effect of Treadmill Training on Cardiovascular Endurance of School Going Children. For the purpose of the study 30 boys (15 for control group and 15 for experimental group) from Ramkrishna Krida Vidyalaya, Amravati, Maharashtra were selected as subjects, the age of the subjects was ranging from 12 to 15 years. The data were collected before the start of 8 weeks treadmill training programme (pretest) and immediately after completion of 8 weeks treadmill training programme (posttest) by the test of 9 minute run and walk. To determine the treadmill training effect on cardiovascular endurance Independent and Dependent t-test statistical technique were employed. The level of significance was set at 0.05 to check the significant mean. The findings of statistical analysis revealed that there was significant difference between the means of pre and posttest of Experimental group and posttest of Control and Experimental Group.

Keywords: Treadmill, Training, Cardiovascular Endurance and 9 minute run and walk.

Introduction

The ability to continue in certain physical activities, such as Soccer, Basketball, Hockey, Distance Swimming is basically depend upon the capacity of the heart, blood vessels and

blood (circulatory system) and to distribute blood to working muscles. The lungs (respiratory system) provide the oxygen that makes its way from environmental air to the blood. Weight training significantly improves performance of sprinting players (Richard and Bernes, 1983). Dennison et.al. (1932) also proved that Isotonic and Isometric exercises programmes significantly improve the muscular endurance of soccer players and Roger et.al. (1984) also showed that weight training has significant effect on speed performance of Sprinters. Treadmill consists of motor driven conveyor belt that is large and strong enough for the subject to work and run upon. These devices are usually constructed so that the speed of the belt and the inclined are adjustable lie like with grading scale attached to it. When walking or running on treadmill there is no attention require of the subject in keeping pace and there is greater muscle mass involvement than bicycle or bench stepping. Clark (2010) with the agreement of mixed Endurance and Intensity Interval training has significant improvement of cardio-respiratory fitness of female Soccer players. Paradise et.al (2003) also proved continuous and interval training has significant effect on aerobic capacity. Time to time research has been proved that different endurance training methods have significant effect on cardio-respiratory and circulatory system. Treadmill



training is also expected to have significant effect for the improvement of the cardiovascular endurance and aerobic power of the sports persons or boys.

Hypothesis

It was hypothesized that there would be significant effect of treadmill training on cardiovascular endurance of school going boys.

Methodology

Subjects Selection

30 Boys of 12 to 15 years of age were selected randomly from Ramkrishna Krida Vidyalaya in Amravati, Maharastra as subjects for the purpose of the study.

Procedure

On the basis of Pre-test scores on selected variables 30 subjects were divided in to two equated groups namely control group and other is experimental group. Experimental group was undergone 8 weeks treadmill training whereas control group was not given any specific training but they continued with their regular activities.

The data cardiovascular endurance was measured through 9 minutes run and walk test and score was recorded in meters.

Findngs

To determine the significant difference among the pre and post test means of Experimental and Control group Dependent and Independent t-test Statistical techniques were employed separately for each selected variable. Level of significance was set at 0.05 for testing the hypothesis.

The findings are shown in the following tables:

TABLE-1
T-RATIO FOR THE DATA ON CARDIOVASCULAR ENDURANCE OF PRE AND POST TEST OF CONTROL GROUP

Control Group (pre-test)		Control Group (post-test)		MD	SE	t'-ratio
Mean	S.D	Mean	S.D			
1346.33	102.52	1354	113.88	7.67	4.83	1.59

*Significant at 0.05 level $t_{0.05(14)} = 2.144$

TABLE-2
T-RATIO FOR THE DATA ON CARDIOVASCULAR ENDURANCE OF PRE AND POST TEST OF EXPERIMENTAL GROUP

Experimental Group (pre-test)		Experimental Group (post-test)		MD	SE	t'-ratio
Mean	S.D	Mean	S.D			
1354	93.95	1461.33	90.86	107.33	4.08	26.31*

*Significant at 0.05 level $t_{0.05(14)} = 2.144$

TABLE-3
T-RATIO FOR THE DATA ON CARDIOVASCULAR ENDURANCE OF POST TEST OF CONTROL AND EXPERIMENTAL GROUP

Control Group (post-test)		Experimental Group (post-test)		MD	SE	t'-ratio
Mean	S.D	Mean	S.D			
1354	113.88	1461.33	90.86	107.33	37.66	2.85*

*Significant at 0.05 level $t_{0.05(14)} = 2.144$

Findings of table-1, 2 and 3 reveal that there are significant mean differences on cardiovascular endurance in between the mean of pre and post test of experimental group and post test of control and experimental group as calculated t- ratio value of 26.31 and 2.85 respectively are higher than the tabulated t-value of 2.144 and 2.048 respectively at 0.05 level for 14 and 28 degrees of freedom respectively. It is also evident from above table that there is no significant mean difference on cardiovascular endurance in between pre and



post test of control group as calculated t-ratio value of 1.59 is less than the tabulated t-value of 2.144 at 0.05 level for 14 degrees of freedom.

Discussion

The findings of Table-1 indicated that there were significant differences in cardiovascular endurance between the means of pre and post test of experimental group as well as post tests of experimental and control group. This signifies that due to 8 weeks of treadmill training brought fruitful results within the subjects of experimental group. It may be attributed to the fact that treadmill training was given to the boys with maximum volume that may leads to lungs and heart hypertrophy through which the following physiological changes might have occurred within subjects hence improvement was occurred among the subjects. There were increased capillaries around the muscle, oxygen uptake and intake capacity, lactic acid tolerance capacity of muscle, cardiac output and vital capacity.

Conclusion

Significant improvement was found in cardiovascular endurance due to systematic treadmill training. For the utmost development of cardiovascular endurance among the boys treadmill training with maximum volume is highly recommended.

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